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EXAMINER

LUKS, JEREMY AUSTIN

ART UNIT PAPER NUMBER

2837

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Please find below and/or attached an Office communication concerning this application or proceeding.



## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Claims 1-14 and 20 is acknowledged.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Novitschitsch (6,457,547) in view of Brown (3,531,602). Novitschitsch teaches a compact loudspeaker (Figure 2) adapted for installation in a partition comprising a loudspeaker driver (1) including a diaphragm suspended in a supporting flange structure (Figure 1, #39) proximate the driver (1) proximal peripheral edge, said driver (1) diaphragm having a proximal surface and a central axis (see axial dotted line through the center of the apparatus in Figure 2); said driver (1) further including a motor structure including a magnet (41) and an axially aligned pole piece (See unlabeled pole portion between magnet #41 and loudspeaker #1 within the central axis). Novitschitsch fails to teach a control switch connected to said loudspeaker and configured to control a signal passed to the loudspeaker driver, said switch being actuable using an elongate switch shaft having a proximal end, said shaft passing through said pole piece and said driver

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diaphragm whereby said shaft proximal end projects proximally beyond said driver diaphragm proximal surface; and wherein said control switch is carried on a distal back plate of said motor structure and is configured to control the amplitude of said signal passed to the loudspeaker driver; and wherein said control switch is configured to control the input power level of said signal passed to the loudspeaker driver. Brown teaches a control switch (Figure 1, #13) connected to a loudspeaker (6) and configured to control a signal passed to the loudspeaker driver (Col. 1, Lines 55-61), said switch (13) being actuable (via knob #5) using an elongate switch shaft (15) having a proximal end, said shaft (15) passing through a driver diaphragm (7) whereby said shaft (15) proximal end projects proximally beyond said driver diaphragm (7) proximal surface; and wherein said control switch (13) is carried on a distal back plate of a motor structure (11) and is configured to control the amplitude or input power level of said signal passed to the loudspeaker driver (7) (Col. 1, Lines 36-38). Brown acknowledges that it is well known in the art to pass the control switch through the speaker magnet (Col. 1, Lines 38-42), which if used in combination with Novitschitsch would the said shaft (15) pass through said pole piece of Novitschitsch and said driver diaphragm (7). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Novitschitsch, with the apparatus of Brown to provide a convenience of front panel operation of the speaker controls.

2. Claims 5 and 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Novitschitsch (6,457,547) in view of Brown (3,531,602) as applied to claim 1 above, and further in view of Lamm (6,164,408). Novitschitsch teaches including a back

can (Figure 2, #3) having a central axis that is coaxial with said driver central axis (see axial dotted line through the center of the apparatus in Figure 2); said back can (2) having a proximal opening adapted to receive said driver (1), wherein said driver (1) is carried in said back can (2) by the driver (1) supporting flange (7) peripheral edge; said back can (2) also having a solid side wall (4) and a solid rear wall (3) defining the back can (2) exterior surface and carrying a plurality of electrically conductive connectors (8 – see the two connection portions making up plug #8) having conductive poles (see the two pole portions within connectors of plug #8) aligned in a linear array; wherein said back can (Figure 2, #2) exterior surface (6) includes at least one swing-out fastener (16) carried on said back can (2) exterior surface (6) proximate a proximal outwardly projecting peripheral flange (Figure 2, #7); and wherein said electrically conductive connectors (8 – see the two connection portions making up plug #8) are carried on a distal portion of said back can (Figure 3, #2) exterior surface (6). Novitschitsch fails to teach wherein said selector switch and a multi-tap transformer are enclosed within said back can; wherein said switch and said driver are connected with at least one electrical conductor; wherein said multi-tap transformer and said switch are connected with a plurality of electrical conductors; wherein said multi-tap transformer and said electrically conductive connectors are connected with at least one electrical conductor; wherein said control switch shaft proximal end carries an input power level selector knob; wherein said control switch is configured to select one transformer tap among a plurality of available taps for controlling said signal passed to the loudspeaker driver; wherein said electrically conductive connectors comprise four conductive poles aligned in a

linear array. Brown teaches wherein said switch (Figure 1, #13) and said driver (6) are connected with at least one electrical conductor (see wires protruding from center portion of receiver chassis #11); and said control switch shaft (15) proximal end carries an input power level selector knob (5). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Novitschitsch, with the apparatus of Brown to provide a convenience of front panel operation of the speaker controls. Brown fails to teach wherein said selector switch and a multi-tap transformer are enclosed within said back can; wherein said multi-tap transformer and said switch are connected with a plurality of electrical conductors; wherein said multi-tap transformer and said electrically conductive connectors are connected with at least one electrical conductor; wherein said control switch is configured to select one transformer tap among a plurality of available taps for controlling said signal passed to the loudspeaker driver; wherein said electrically conductive connectors comprise four conductive poles aligned in a linear array. Lamm teaches wherein a selector switch (Figure 3, #36) and a multi-tap transformer (34) are enclosed within a back can (38); wherein said multi-tap transformer (34) and said switch (36) are connected with a plurality of electrical conductors (Col. 7, Lines 39-43); wherein said multi-tap transformer (34) and said electrically conductive connectors are connected with at least one electrical conductor (Col. 7, Lines 35-43); wherein said control switch (36) is configured to select one transformer tap among a plurality of available taps for controlling said signal passed to the loudspeaker driver or exciter (14) (Col. 4, Lines 44-46; Col. 7, Lines 39-43). It would have been obvious to one of ordinary skill in the art at the time of the

invention to combine the apparatus of Novitschitsch as modified, with the apparatus of Lamm to correctly match the impedance of the speaker with the input signal for the purpose of adjusting the overall volume. Lamm fails to teach wherein said electrically conductive connectors comprise four conductive poles. However, It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide electrically conductive connectors comprising four conductive poles, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

3. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Novitschitsch (6,457,547) in view of Brown (3,531,602) as applied to claim 1 above, and further in view of Lesage (5,875,252). Novitschitsch and Brown are relied upon for the reasons and disclosures set forth above. Novitschitsch and Brown fail to teach wherein said control switch shaft proximal end carries a radiation uniformity enhancing phase plug. Lesage teaches a shaft (Figure 1, #18) proximal end carries a radiation uniformity enhancing phase plug (16) (Col. 5 Lines 37-44). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Novitschitsch as modified, with the apparatus of Lesage to improve the sound quality of the speaker.

### ***Conclusion***

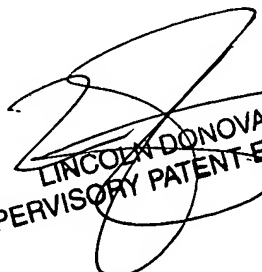
4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent arts of record relating to compact loudspeaker and control switch assemblies are disclosed in the PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Luks whose telephone number is (571) 272-2707. The examiner can normally be reached on Monday-Thursday 8:30-6:00, and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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